DOCUMENT RESUME

ED 460 674 IR 017 899

AUTHOR	Riel, Margaret
TITLE	The Internet and the Humanities: The Human Side of Networking. The Future of Networking Technologies for Learning.
SPONS AGENCY	Department of Education, Washington, DC. Office of Educational Technology.
PUB DATE	1995-11-00
NOTE	8p.
AVAILABLE FROM	For full text: http://www.ed.gov/Technology/Futures/riel.html.
PUB TYPE	Reports - Evaluative (142)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Computer Networks; *Computer Uses in Education; Cooperative Learning; Distance Education; Educational Resources; Educational Technology; Elementary Secondary Education; *Human Factors Engineering; *Internet; Learner Controlled Instruction; Problem Solving

ABSTRACT

This paper focuses on the human side of networking in education, emphasizing that people working together can create new solutions to old problems. Discussion includes increased links to information through the Internet and new resources entering the classroom; team-teaching, cooperative learning, and learner-centered instruction; and distance education. The report also describes ways for students to reach out to the community, in problem-solving, involement in city planning, and developing apprenticeships with local organizations. In addition, reservations about technological solutions and problems are examined. (AEF)

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The Future of Networking Technologies for Learning

The Internet and the Humanities: The Human Side of Networking

ED 460 674

Margaret Riel
INTERLEARN

Heather Davis, John Wayland Elementary, VA

"I think, therefore I am." said Rene Descartes about human consciousness. Since Descartes knew the power of the written word he might have said: "I write, therefore I am immortal." Not all written words will help a person achieve the immortality of Descartes or Shakespeare, but in most cases, writing helps people extend who they are, and how they think, across the boundaries of time and space.

We send children to school so that they will be able to learn what previous generations have discovered about life. We want our children "to stand on the shoulders of giants" so that they may use what is known to see further into the future. Yet the power of the written word is not often the topic in classroom language instruction. Children are taught to write by exercises such as finding the main idea or arranging a list of sentences into the format of a paragraph. When writing is decontextualized into a set of meaningless exercises, it loses its force. Current developments in communication technology now provide new options for students to extend themselves across distances and through time. This technology invites children to leap off the "shoulders of giants" onto satellites and use this global perspective to participate in new ways with their peers and other experts in distant locations. It is possible that these experiences will help make the power or the written word more apparent to new generation of citizens

This paper on the Internet and the humanities focuses on the human side of networking. How do classrooms change when they are part of a global network like the Internet? What future images of schooling can we see from the vantage point of satellites? The paper is organized around two general topics followed by some reservations about technological solutions and problems.

IR017899

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Resources Entering the Classroom

Classrooms are places where children learn the tools and skills necessary to be productive members of the society. Quality public education is the best form of national security a democracy can have. Children need to understand the value of freedom and diversity and to recognize the problems of tyrannies and dictatorships. The stability of our democracy depends on children developing the skills for separating fact from fiction, theory from speculation, and information from propaganda.

The decisions as to what to teach, who should teach, and how to teach are extremely complex and dynamic. We want children to have open access to multiple sources of information, but we also want them to have accurate, clear, and concise materials. State agencies, as well as intellectual disciplines, create guidelines or frameworks for what should be part of the school curriculum. Teacher education programs and state certification procedures provide one way of regulating who will teach, at least in publicly funded schools. The modes of instruction remain a hybrid of art and science, individual talent, and methods instruction. So each of these decisions is made by a complex partnership among the student, parents, teachers, schools, communities, districts, states, regions, and nations.

In the information age, students with internet access can explore extensive libraries and international resources of materials in the humanities and social sciences. School libraries will effectively have an interlibrary loan program that will sweep the globe and be able to make vast amounts of information available instantly.

The networks now available are much more than links to information. They provide more flexible and less intrusive ways for people to interact at a distance. For example, compare the PBS Online Newshour on the Internet, with their televised programs. In the broadcast version there is a tightly scripted sequence with limited time for all of the information collected. In the online environment, much more information is available and the pace, order and content is up to the teacher or student. Background briefs, previous programs on the specific topic and links to people and places for more extensive exploration of a topic are available. The depth of study of the topic is up to the viewer.

This extensive information source may make it easier to teach some subjects as both students and teachers will be able to find information which is not now available at their schools. However, the decisions about what to teach, with what methods and by whom are made by groups of people and not by giving schools extensive source materials.

New forms of communication do encourage flexible partnership among those who create instructional materials and those who decide what is the subject to be taught . What does this mean for classrooms? How might classrooms be different if a wider range of people join the classroom teacher with more presence than that contained by current books or materials? Will networks influence the way society decides what to teach, who should teach, and how to teach? Will networks lead to a different way of combining source information with group process?

Team-Teaching in the Near Future-- Vision 1

In this scene from the future, the teacher is no longer alone in the classroom. There are mentors in the community and teachers and peers far away that are a part of the classroom activity. Students take more responsibility for their learning. The products of student work, such as the multi-media report on the pyramids, can become learning tools for peers in other locations.

How realistic is it to assume that adults in the community would be willing to invest the time and energy to education? A few educational projects are finding a large enough group of volunteers, but the numbers will not scale to cover all schools or all students. To create this level of partnership in schools would require a more organized approach.

To achieve this vision, we will need to find ways of making these types of human resources available to students and teachers. One viable model for doing this is to develop something similar to jury service. Companies would be asked to make people in different roles available (by email) for a period of "service" (one day a month over the year, or each day over one week) to respond to questions from students and teachers. From this pool students and teachers could look for mentors. These experts may not hear from anyone during their period of service and unlike jury duty, they do not need to report to a location and spend the time waiting. If a person is selected as a mentor, as with jury duty, companies would be asked to donate their employee's time for a longer period of time to work with a student or student group. This would never constitute a full-time commitment as sitting on a jury does, but would be considered a legitimate activity within the work day. There are undoubtedly citizens who would enjoy the opportunity to teach students about their work. This model could change the meaning of public education from one of public funding to one of public participation. If more people are involved with students, they become additional voices in the design of educational activities. They become more active partners in the dynamic process of deciding who teaches what to whom, and in what way.

Distant students are already serving as educators in ways very similar to the example above, in which Egyptian students create a presentation for their partners. Most teachers and students who work with distant peers expect to find out more about distant places; they are looking forward to contributions of the distant students as teachers. But in fact, the most important learning that teachers observe and students comment on from these collaborative projects is that of self-reflection. Working with distant students provides a mirror that reflects how one's own community defines who a person is and what he or she does that is unique. The task of describing oneself to others and accepting the role of local expert is a very powerful way to develop self-knowledge and an understanding of one's own community. These observations lead to the next topic, the way in which networks help students leave the classroom and provide resources to the community and how these experiences lead to changes in education.

Resources Contributed to the Community

Computer and printer technology made it possible for people other than parents and teachers to easily read the products of young writers. Networks like the Internet, give students a world-wide distribution channel for their work and make it possible for them to share their work with other learners of all ages. Students are much more willing to invest time when they are creating a library of materials that may be used by students anywhere in the world.

Given the cost of developing materials, curriculum experts can cover only the major topics that most likely to be used by large number of classroom teachers. The packaged materials are expensive to create and produce. With the distribution channels of the Internet, however, it is possible to index and preserve many more topics. Let's again move forward in time and think about how this might change who teaches which material in what way.

Learning through Service to Others--Vision 2

This scenario of students creating learning tools for peers is only one of the many ways that students can reach out beyond classroom practice. Perhaps a few examples will demonstrate how electronically facilitated work could make it feasible for students to take a more active role in their community.

Student voices are often missing in attempts to solve problems that directly involve them. In the '60's the common refrain was "If you are not part of the solution, then you are part of the problem." Students are part of many problems and inviting them to part of the solution would, in itself, be a positive way of dealing with a host of social problems. Students could electronically serve on local, state, national, or world panels exploring social or global problems. Students might offer some clear insights and innovative ways of dealing with the complexity of problems that surround gangs, teen pregnancies, drug dependency, unemploymen$, and drunk driving.

Schools could develop apprenticeship relationships with many different organizations. For example, a news reporter might develop a column in the local newspaper that reports the ideas and thoughts of teenagers on a range of issues. The reporter could electronically send out a topic to schools for students to address, collect comments and writing from students around the city, then create a column that uses their ideas, words or suggestions. The list of contributing students could be part of the credits. Students would be more likely to read the local newspaper if they knew that they might find their words, or those of their friends included in an article. Or students could serve as consultants to social agencies trying to provide find solutions to difficult problems. They could offer their solutions for anonymous but real social conflicts between parents and kids.

Students could take an active role in city planning decisions. When city parks, playgrounds, or walkways are planned, students could use these opportunities to work with models on the computers. They could interview citizens about their use of parks and playgrounds, discuss constraints with city planners and review budgets and costs of different materials to help formulate alternate plans for design. Such a project would involve interpersonal skills, reading, writing, numerical computations, artistic design, and problem solving.

Moving beyond the humanities into the sciences, one can identify many current projects in which students work with scientists to collect acid rain or weather measurements. The more involved students are in their communities, the less likely they are to feel the need to create their own counterculture gangs.

Technology Will Never Be the Complete Solution to What Ails

The tone of this paper might appear to be overly optimistic and perhaps naive about technological change in schools. The fact is, technology does not change anything. The consistent theme of this paper is that people working together can create new solutions to old problems. Technology increases the number and range of people with whom we can easily interact, and it is these partnerships that lead to new forms of teaching and learning.

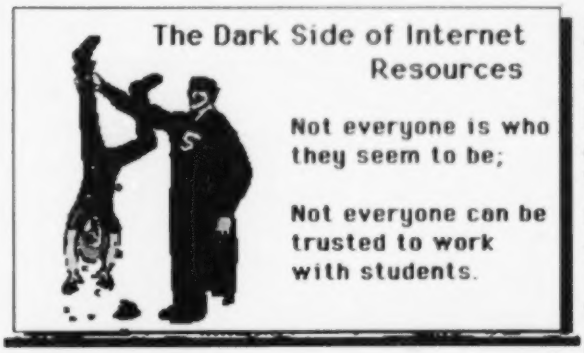
The two scenarios provided a positive image of the use of technology in classrooms. Most advancements in human technology have their dark side. Let's consider resources coming into the classroom first because this issue is most often the focus of "scare" stories about the Internet.

The Dark Side of Community Resources

There are many sources of information, some appropriate for children and some not. Who should make the decision about what is allowed and not allowed into the classroom? At present we have entire industries devoted to writing textbooks and heated debates about the content of textbooks at local, state and federal levels. All efforts to describe history are perspectival in nature. Textbook descriptions reflect the view of dominant groups rather than an impartial record of the past. This mediated control of the view of history as well as the understanding or interpretation of all aspects of our culture is threatened by open access to materials on the Internet.

Classroom access to distributed networks like the Internet brings these decisions to the classroom level and makes the student and teacher more active partners in deciding what content should be included. This open access makes it possible for students to read the historical perspectives of Native Americans and African Americans as well as those of the Klan and neo-nazi groups. Open and free access to all materials places children in the role of making decisions about relative truths. It makes it necessary for even very young children to understand the principles and problems of an open democracy.

A tension exists between the desire to preserve free speech, a free press, and open access to information on one hand, and the need to help young children recognize and reject materials that preach hate and humiliation of individuals or groups on the other hand. Yet who makes the decisions about what is propaganda and pornography? Who makes the decision of what is appropriate for classroom use without restricting the liberty to express ideas on which the future of this country rests? Networks are new forms of information distribution. They allow a greater participation in public dialog. In doing so, they raise old issues of public decency versus freedom of expression, of truth versus libel. And for schools, they highlight the need to rethink how society will make decisions about what is taught, by whom, and in what way.



A similar problem arises with the use of mentors. Teachers are certified and screened and yet every newspaper in every community reports stories about local teachers who abuse their close relationship with children. This also could be a problem with mentors. Those who want contact with children for illegal or immoral purposes may find mentor programs an easy way to find and interact with students.

These are human problems that have been faced by each generation and will be solved by each generation in ways appropriate to changing times. The doors of the Internet cannot be closed, but we can and are finding the ways to make sure that those we invite into the classroom and the materials that we make available to students help them develop the skills that they will need as adults. And one of these skills will be to recognize danger in cyberspace and learn how to avoid it.

The Dark Side of Increased Student Participation in the Community.

There are a host of ethical issues that revolve around intellectual property and work vs. learning. Students are great inventors, writers, producers, musicians, and performers. As we invite more active participation in the community, who owns the work of students? Does it belong to the parents who might spend hours investing their ideas in their children or paying for skill instruction after school? Does it belong to the school because of the work of skilled teachers who foster excellence?

We face these issues now in small but real ways. When students enter their work in contests and win, who is rewarded? Often the prize is multifaceted. The community, school, teacher, and student are all recognized in public forums such as newspapers and ceremonies. Sometimes there is prize money for the student only, sometimes the teacher or the school receives a reward and sometimes it involves a combination.

Students are also creating print and online documents for community and for commercial services. The construction and maintenance of a Web site might be an educational experience, but it is also a commercial service. Companies might "reward" the school with donation of equipment of access to other services.

If we forge stronger links between the community and schools, these infrequent events may become more common. Rewarding student, teacher, or school could import many of the problems of the industrial age to the information age. It is possible to conceive of a school in which teaching acquires a monetary incentive. School topics could be influenced by the availability of prize money or community contributions for services rendered. The decision of what to teach could be subverted by economic needs rather than intellectual development of the student. Students could become the information age workforce, with profit incentives driving education.

These human problems are not new. Technology does not change schools, people do. New opportunities and the ability to forge new partnerships bring with them new decisions. We should use the technology to help us think about these issues and come to terms with their evolution. No human problem can be solved for all time, since change is part of the human condition. As society changes, so will the way people interact with each other and with its tools. The past, the humanities, can help us, but the problems of the today will be worked out with the solutions that are evolving.

Conclusions

We have increasingly powerful tools in our hands. If used wisely we can change schooling in positive ways. We can increase the human and informational resources in the classroom. Flexible short-term tele-apprenticeships can help students contextualize the skills they learn in school. The Internet may provide for a new structure of team teaching where many more people in the society play significant roles in education.

Many students find classroom work meaningless and do not attend either intellectually or physically. We have the tools to engage students in work that can be of use to the community. They can learn while participating in activities that have value to others.

With new power tools come new dangers. It is important to explore the dangers and then develop the best safeguards possible. Understanding and dealing with ethical and moral issues associated with technology is an ongoing process that faces not only schools, but all sector of the society.

Finally it is the power of ideas, words, and images that make us human. It is this power that Descartes felt when he wrote "I think, therefore I am." When we can give our children a sense of this power, we give them the energy to construct their future.

This paper was written under contract to the Department of Education as one of the "White Papers" to envision the use of the Internet in different disciplines.

Comments?
Margaret Riel (mriel@iearn.org).

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Last modified May 1, 1996 (gls).